NON-TECHNICAL ABSTRACTS

Malignant mesothelioma is a lung cancer originating from the pleura and is caused by occupational exposure to asbestos. Mesothelioma is highly overrepresented in South East Louisiana, specifically the New Orleans area. The city had a large shipyard industry and one of the largest asbestos manufacturing plants in the country; it has a disproportionately large incidence of this disease. There is no satisfactory treatment for this cancer and it is almost universally fatal, regardless of the stage of the tumor at the time of diagnosis. Current treatment modalities include surgery, chemotherapy, and radiation therapy, although in some series none of these modalities is superior to no treatment at all. Because of the dismal prognosis for patients with malignant mesothelioma, a new mode of treatment is desperately needed. A promising area of research into the treatment of various malignancies is gene therapy. Recent studies have demonstrated the utility of exposing tumor cells to cells transduced to express the Herpes simplex virus gene for thymidine kinase (HSV-TK). By virtue of their expression of HSV-TK, the transduced cells are rendered susceptible to the antiviral drug, ganciclovir (GCV). Nearby tumor cells are killed by a so-called bystander effect. In this protocol we propose a Phase I trial to introduce HSV-TK-transduced ovarian cancer cells into the pleural cavities of patients with malignant pleural mesothelioma, followed by systemic administration of ganciclovir. The hope is that administration of ganciclovir will result in killing of the transduced ovarian cancer cells as well as the nearby malignant mesothelioma cells.